Kingston Technology
Data Express®
DE300i-S
Removable 3-Bay SCSI Enclosure with Single-Ended 8-Bit I/O

User's Guide

Kingston Technology's

Data Express®
DE300i-S

Removable 3-Bay SCSI Drive Enclosure with 8-Bit Single-Ended

User's Guide

Part No. D89-0000-0021 B00 May 1997

Kingston Technology Company
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Fountain Valley, CA 92708-9885
Phone (714) 438-1850 Fax (714) 438-1847

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KINGSTON TECHNOLOGY COMPANY ("Kingston") warrants that this product is free from defects in material and workmanship. Subject to the conditions and limitations set forth below, Kingston will, at its option, either repair or replace any part of this product which proves defective by reason of improper workmanship or materials. Repair parts or replacement products will be provided by Kingston on an exchange basis, and will be either new or refurbished to be functionally equivalent to new.

This warranty does not cover any damage to this product which results from accident, abuse, misuse, natural or personal disaster, or any unauthorized disassembly, repair or modification.

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Kingston TECHNOLOGY

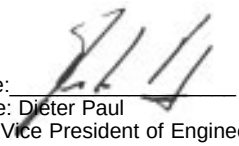
CE Declaration of Conformity

Company's Name:	Kingston Technology Company Storage Products Division
Company's Address:	17600 Newhope Street Fountain Valley, CA 92708
Manufacturer's Address:	11535 Martens River Circle Fountain Valley, CA 92708
Product Name:	Data Express DE300i
Model Number:	DE300i-XSXX/XXX

Conforms to the following specifications:

Safety Agencies:	**Safety Tests:**	**License #:**
CSA "Certified"	CAN/CSA-C22.2 No950-93	LR 90843-3
UL	UL 1950	E173791 SP
TÜV "Bauart Geprüft"	EN 60950/06.88	R 9371301
	EN 60950 A1/08.90	
	EN 60950 A2/10.91	
Safety Directive:	73/23/EEC low voltage	
	EMC Tests:	
	EN 50081-1:1992 for Generic Emission	
	CISPR22:1995/EN 55022:1987 Class B	
	EN 50082-1:1992 for Generic Immunity	
	IEC 1000-4-2:1994 ESD	
	IEC 1000-4-3:1994 Radiated EM Field	
	IEC 1000-4-4:1994 Fast Transient/Burst	
EMC Directive:	89/336/EEC	
	FCC Part 15, Class B	

Year of Manufacture: 1997



Signature:_____
Full name: Dieter Paul
Position: Vice President of Engineering

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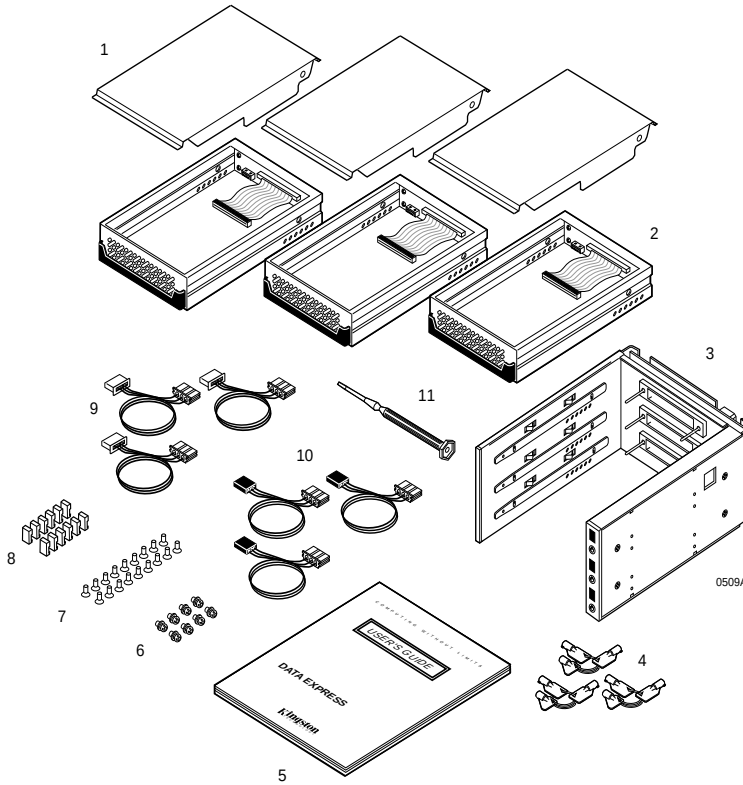
Data Express® DE300i-S

Packaging Materials

The Kingston Technology Data Express® system is shipped in a container designed to provide protection and prevent damage during shipment. The Data Express unit was carefully inspected before and during the packing procedure at the factory. Bent or broken connectors, or evidence of other damage to the Data Express should be reported to the shipper immediately. Refer to Figure 1 for the package contents.



1. Drive Cover
2. Drive Carrier
3. Receiving Frame
4. Drive Lock Keys
5. User's Guide
6. 6-32 by 1/4" Phillips Machine Head Screws (8 pcs)
7. 6-32 by 3/16" Phillips Flush Mount Screws (18 pcs)
8. Jumper Plugs
9. .1"/1.25mm ID Select Cables
10. .1"/2mm ID Select Cables
11. Adjustment Tool

Figure 1: Data Express DE300i-S Package Contents

If the wrong Data Express model has been received, please call Kingston's Storage Product Division at (800) 435-0642. A staff member will give you a Return Material Authorization (RMA) number to facilitate processing. Kingston cannot accept returns which do not display an RMA number on the outside of the package. Return the unit with all the original packing materials.

Before removing any component from its packaging, discharge any static electricity by touching a properly grounded metal object.

Package Contents

The DE300i-S package contents include the following items:

Table 1: Shipping Contents

One Kingston Data Express SCSI System	Part Number	DE300i-S (Carrier & RF)	DE300i-CS (Carrier)	DE300i-RS (Receiving Frame)
Drive Carrier	DE300i-CS	(3)	(1)	
Receiving Frame	DE300i-RS	(1)		(1)
Alignment Tool	D45-0000-0037	(1)		(1)
Phillips Mounting Screws (6-32 by 3/16" Flat Head to attach drive and cover)	D45-0000-0001	(18)	(6)	
Phillips Mounting Screws (6-32 by 1/4" Machine Head to attach receiving frame to computer)	D45-0000-0004	(8)		(8)
.1 inch/1.25mm ID Select Cable	D12-1000-0085	(3)	(1)	
.1 inch/2mm ID Select Cable	D12-1000-0086	(3)	(1)	
Drive Cover	D10-4040-0213	(3)	(1)	
Jumper Plug, 2mm	D16-0000-0053	(12)		(12)
Drive Lock Keys	D10-4050-0005	(3 sets)		(3 sets)
User's Guide	D89-0000-0021	(1)	(1)	(1)

If any item is missing or damaged, contact your Kingston dealer for a replacement.

Serial Numbers

Both the Data Express receiving frame and carrier are labeled with serial numbers. These numbers must be reported to the Kingston Customer Service Representative in order to receive a Return Material Authorization (RMA) for warranty claims. Locate the serial number labels and record the numbers in the spaces provided below.

Receiving Frame:	
Drive Carriers:	

General Description

The Kingston Technology **Data Express® DE300i-S** is a durable removable enclosure for three low-profile (1" high), 3.5" form factor SCSI drives. The DE300i-S is composed of a receiving frame with 8-bit single-ended SCSI connectors which contains three removable drive carriers and fits within 5.25" full-height peripheral slots.

The Data Express allows a drive to be removed and transported to another Data Express-equipped computer or expansion chassis, and also provides the ability to secure sensitive data by removing and storing the drive safely for future use.

This User's Guide describes the steps required to install the Kingston Data Express DE300i-SW removable enclosure inside a computer peripheral bay or external expansion chassis. This guide supplements documentation provided with the host computer system, operating system, and the drive to be installed within the Data Express carrier.

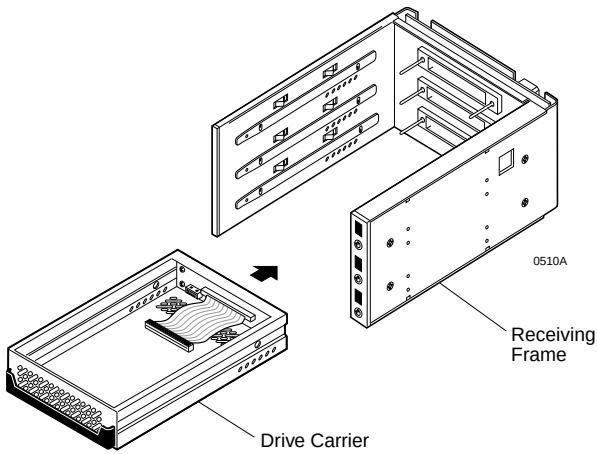


Figure 2: DE300i-S Receiving Frame and Drive Carrier

The Receiving Frame Front Panel

- **Key Lock/Drive Power Switch** (Figure 3) - This key switch assures proper seating of the drive carrier within the receiving frame, it turns power to the drive carrier on and off, and it prevents unauthorized removal or installation of the carrier. For the computer to access data on the Data Express drive, the key must be turned counterclockwise to the locked position. The key can be configured as either fixed or removable as shown in Appendix C.

- **Unit Number Indicator** (Figures 3 and 4) - This LED displays the status of the drive carrier. A unit number is displayed when the carrier is *installed and locked* into the receiving frame **or** if the carrier is *removed* from the receiving frame. If the carrier is installed in the receiving frame but *unlocked*, a "u" will be displayed.

  The unit number is set by means of the unit select switch located inside the receiving frame using a special alignment tool supplied with the Data Express (see Figure 13).

- **The Activity Indicator** (Figures 3 and 4) - A small dot next to the unit number illuminates to indicate when the host computer is accessing the data on the Data Express carrier. This dot will flash during communication with the host computer.

- **Device Spin Down/Up Timer** (Figure 3) - This timer controls the length of time that the unit number display flashes during device spin down/up, providing a visual indication of drive activity. Refer to Figure B-3 for switch settings.

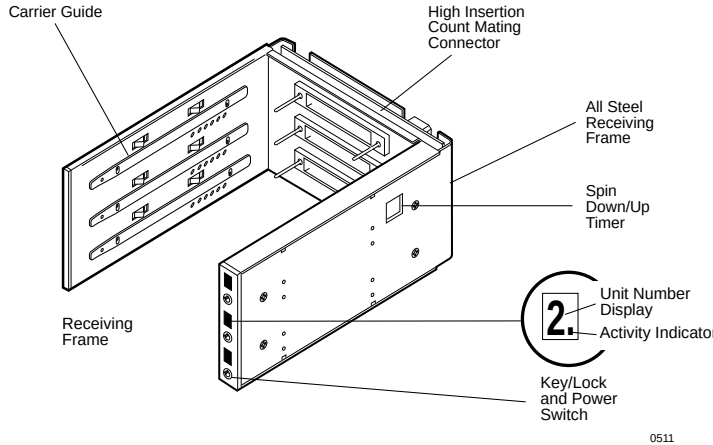


Figure 3: Receiving Frame Front Panel

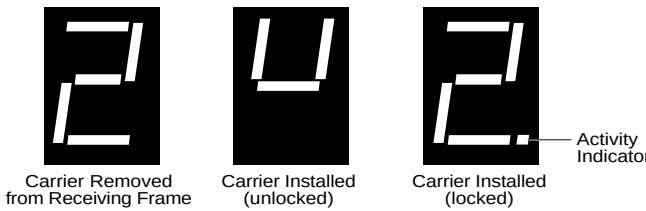

Activity Indicator
Carrier Removed from Receiving Frame
Carrier Installed (unlocked)
Carrier Installed (locked)
The number '2' shown above is for illustration purposes only. It can be any valid Unit ID number. However, the letter 'U' (above middle), will appear as illustrated.
0064

Figure 4: Unit Number Display Conditions

The Receiving Frame Rear Panel

- **I/O Connectors (J3, J4, and J5)** - These connectors provide a standard interface for all SCSI signals (Figure 5). See Table 3 for pin assignments.
- **DC Power Connector (J6) -** A standard 4-pin Molex power connector is used to accept DC power.
- **ID Select Connectors (J3A, J3B and J3C)** - Pins 1 through 6 of these connectors provide SCSI unit ID selection for the computer system or expansion chassis. For remote ID selection through an expansion chassis, an appropriate cable must be attached to these pins and the unit ID must be set to "0". The unit ID can be set with a rotating switch located inside the receiving frame (Figure 13).
- **Disable Termination (DT)** - A factory installed jumper on these pins disables termination. Removing this jumper will enable termination. Remove this jumper if the drive is physically located at the end of a SCSI daisy chain.
- **Remote Activity LED (RLED)** - These pins provide power for a remote LED device activity indicator. (Pin 11=Cathode, Pin 12=Anode.)
- **Enable Termination Power To/From SCSI Bus (TPWR)** - This jumper is installed at the factory.

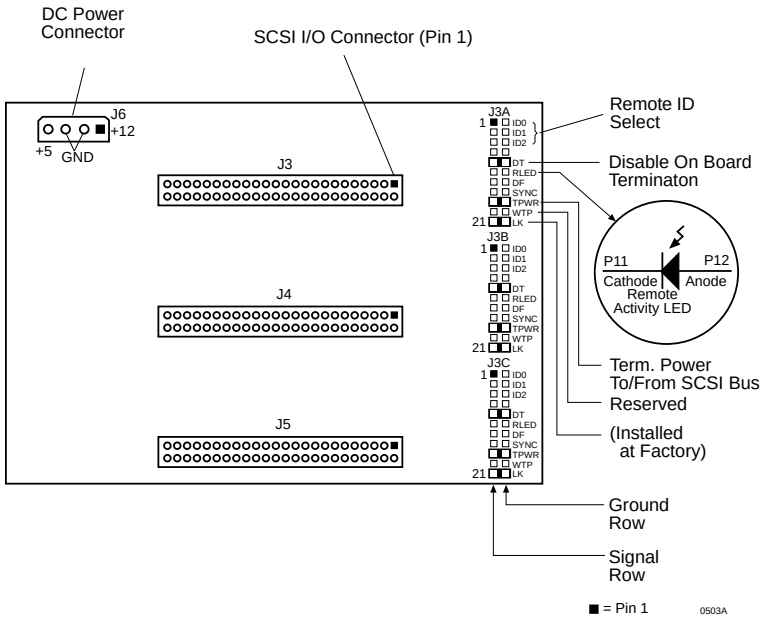


Figure 5: Receiving Frame Mother Board (Rear View)

DATA EXPRESS INSTALLATION

Installing the Drives into the Carriers

Preparation

While performing the steps in this section, work on a soft surface to prevent excessive shock to the drive being installed. Also refer to the manufacturer's documentation provided with the drive.

NOTE: A #2 Phillips screwdriver will be required during this procedure.

1. Remove the drive from its protective packaging.

2. **Plastic Drive Bezel -** If the drive to install is equipped with a plastic front bezel, remove it.

3. **SCSI Drive Termination -** Disable or remove the termination resistor packs from the drive. Termination is performed by an external terminator in the Data Express receiving frame (Figure 5). Refer to the documentation provided by the drive manufacturer for the location of these terminators or jumpers.

4. **SCSI Drive ID Select Jumpers -** Locate the SCSI ID select jumper positions on the drive, and remove any jumper plugs in this area. The SCSI ID cable will be installed into this section of each drive (Figures 9 and 10).

5. **ID Select Cable -** Each Data Express carrier is supplied with two 3-wire cables. Using one of these cables will carry the SCSI ID signal between the drive and the carrier. The signal is then transferred to/from the receiving frame via the carrier and receiving frame mating connectors. The ID select cable permits easy unit ID selection via a small switch located on the inside of the receiving frame (Figure 13). One cable has .1 inch/1.25mm connectors and the other cable has .1 inch/ 2mm connectors. Use one of the cables (depending on the drive's pin connectors) to connect between the drive's remote SCSI ID signals and one of two available connectors on the inside of the drive carrier. Find the cable that matches both drive and carrier pins (Figures 7 and 8).

   The ID select cable contains **black, brown,** and **red** wires. The **black** wire plugs into the drive pin used to select ID0, the **brown** wire plugs into the drive pin for ID1, and the **red** wire plugs into the drive pin for ID2. Most drive manufacturers label these pins as ID0, ID1, and ID2, or similar identification.

   Drives use a row of pins to provide ground to the ID signals. This row of pins is not used for the Data Express installation. One end of the unit ID cable connects to the **signal row** of ID pins on the drive. The other end of this cable attaches to the ID select connector on the inside of the drive carrier (Figures 6 and 7). Refer to the drive manufacturer's documentation for more information.

Installation

1. Attach the I/O interface cable from the Data Express carrier board to the drive (Figure 6).
2. Attach the four-pin power cable from the carrier board to the drive (Figure 6).
3. Install the appropriate three-pin ID select cable into the carrier board connector (Figure 7). Refer to Figure 8 to decide which ID select cable to use. Figure 9 shows a typical drive with 2mm ID pins. Figure 10 shows a typical drive with 1.25mm ID pins.
4. Carefully insert the drive into the carrier at an angle, cable-end first. **Make sure that none of the cables are pinched.** Lower the front of the drive carefully into place. Fasten the drive into the carrier with four #6-32 x 3/16" F.H. screws provided (Figure 6).
5. Attach the provided drive cover with two #6-32 x 3/16" F.H. screws (Figure 6).

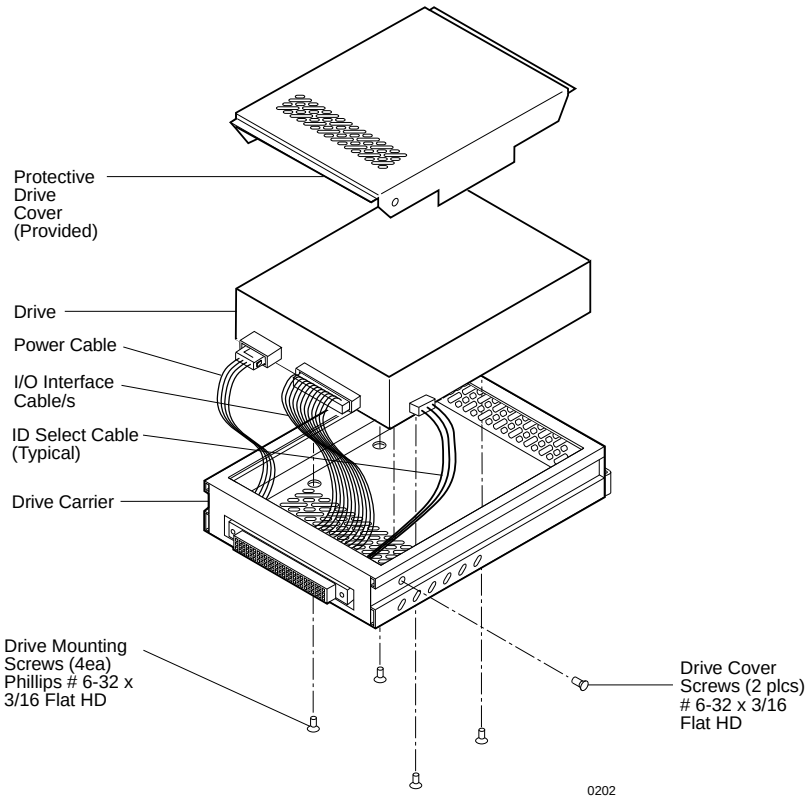

Protective Drive Cover (Provided)
Drive
Power Cable
I/O Interface Cable/s
ID Select Cable (Typical)
Drive Carrier
Drive Mounting Screws (4ea) Phillips # 6-32 x 3/16 Flat HD
Drive Cover Screws (2 plcs) # 6-32 x 3/16 Flat HD
0202

Figure 6: Drive Installation Assembly

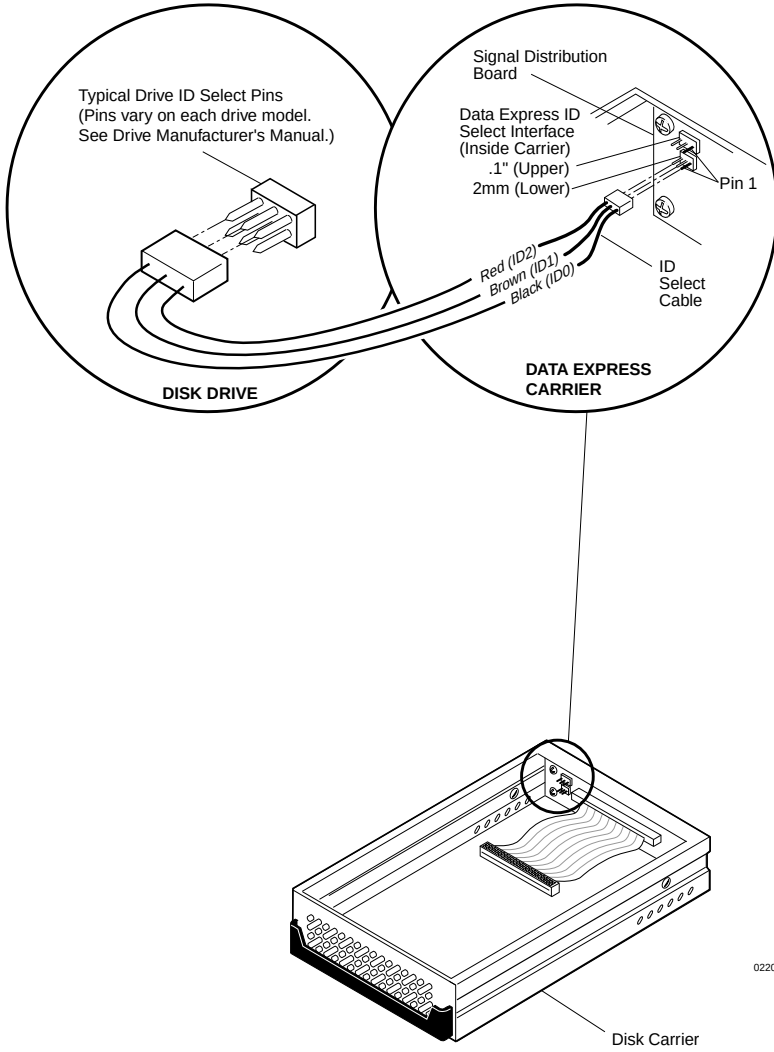
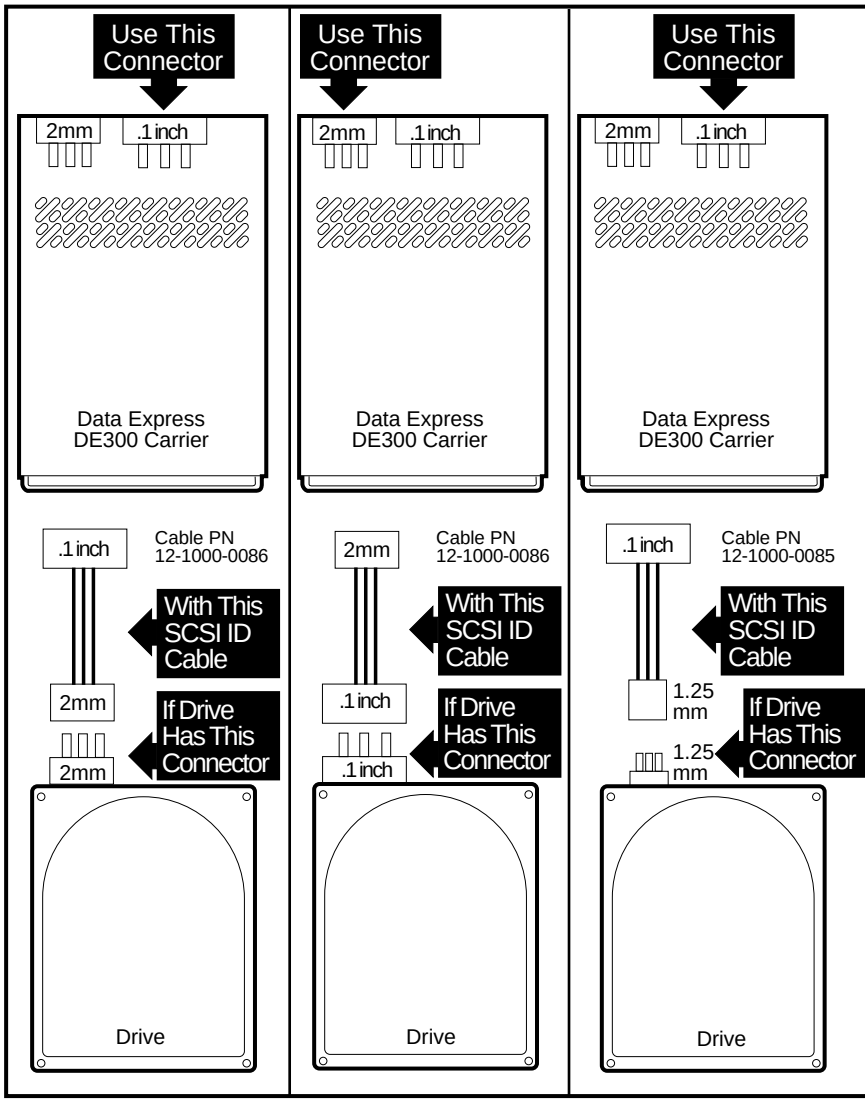


Figure 7: Drive Carrier and SCSI ID Select Cable Connection



* If these cable configurations will not work with your drive, use the provided wire wrap connector to fabricate your own cable.

0222

Figure 8: SCSI ID Select Cable Types

TYPICAL 2MM DRIVE ID PIN CONFIGURATION

Figure 9 illustrates a typical SCSI ID select connection to a drive with 2mm ID select pins. In most cases, the drive manufacturer labels each pair of SCSI ID select pins in their significant bit order (0, 1, 2 as shown in Figure 9). In other cases, the manufacturer does not label these pins in their significant bit order, but instead, assigns pin numbers only. In any case, all odd numbered pins or all even numbered pins will be the signal row. The wires on the wire harness connect to the positive pin (or signal pins) on the drive. Refer to the drive manufacturer's documentation for additional pin numbering and jumper option information.

Attach the .1 inch/2mm ID select cable to the drive using the 2mm connectors. Align the “ID0” pin with the **black** wire. Attach the other end of the ID select cable to the ID select connector located on the carrier board, inside the drive carrier. Refer to the manufacturer’s documentation to disable termination on the drive.

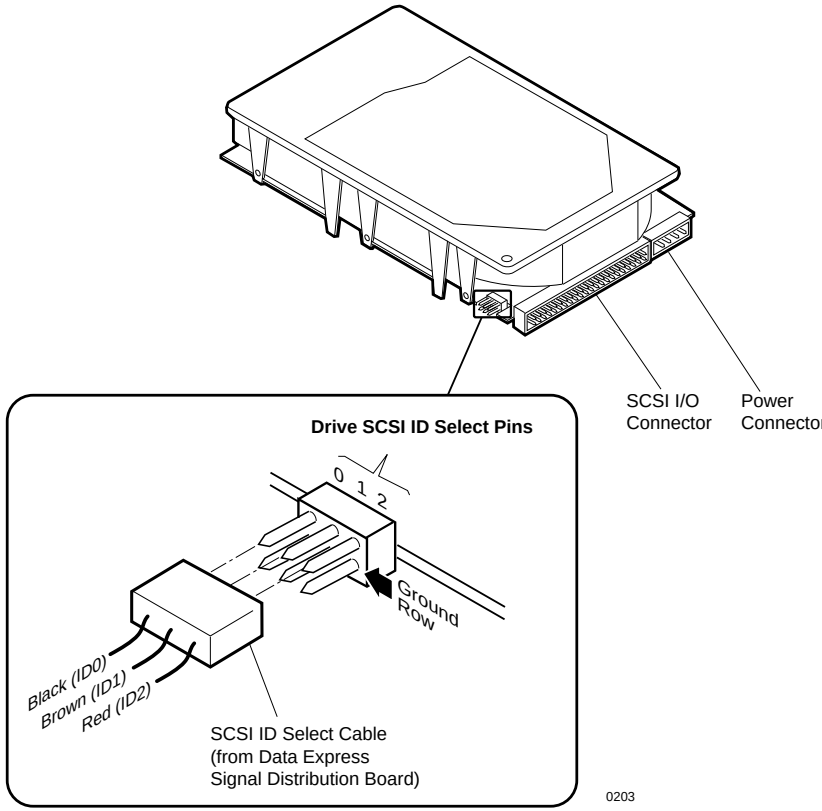


Figure 9: Seagate ST31200N (Typical 2mm Pin Connection)

TYPICAL 1.25MM DRIVE ID PIN CONFIGURATION

Figure 10 illustrates a typical SCSI ID select connection to a drive with 1.25mm ID select pins.

Attach the .1 inch/1.25mm ID select cable to the drive using the 1.25mm connectors. Align the "ID0" pin with the **black** wire. Attach the other end of the ID select cable to the ID select connector located on the carrier board, inside the drive carrier. Refer to the manufacturer's documentation to disable termination on the drive.

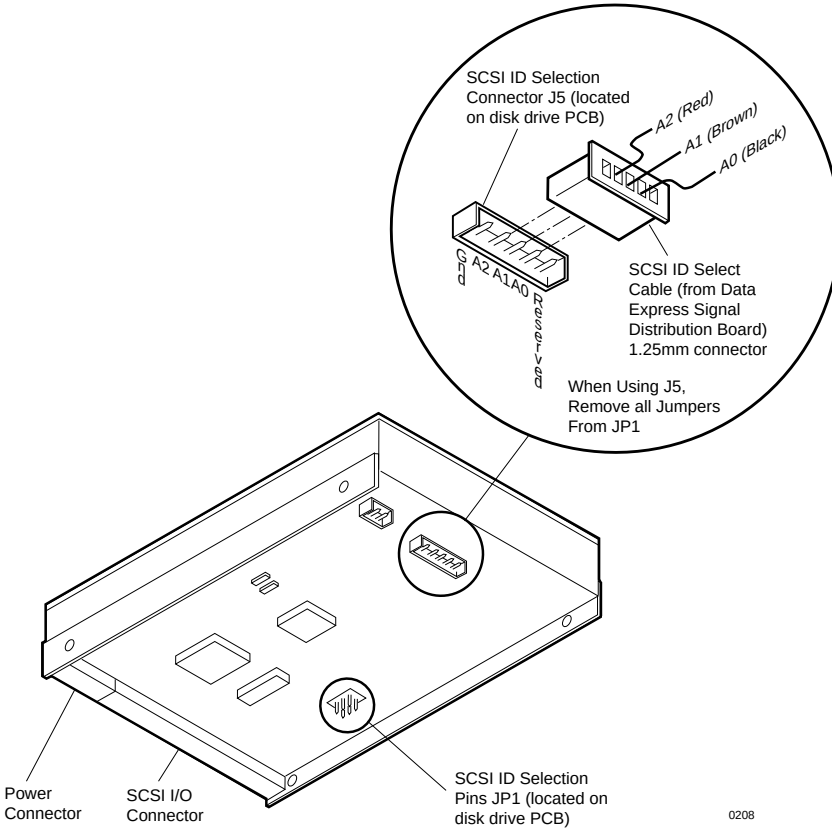


Figure 10: Quantum 540S (Typical 1.25mm Pin Connection)

Installing the Receiving Frame

The drive should be installed into the carrier before installing the receiving frame into the mounting bay of a computer or expansion chassis.

NOTE: Use a #2 Phillips screwdriver during this procedure.

1. Turn off power to the computer.

2. Open the computer system according to the manufacturer's instructions. If necessary, temporarily remove any expansion boards that may make installation difficult.

3. To select the Data Express unit ID remotely through the computer system or external expansion chassis, the appropriate cable from the system must be connected to option pins (1-8 on connectors J3A, J3B, J3C) on the rear of the receiving frame (Figure 5). Set the unit ID to '0' for remote ID selection (Figure 13).

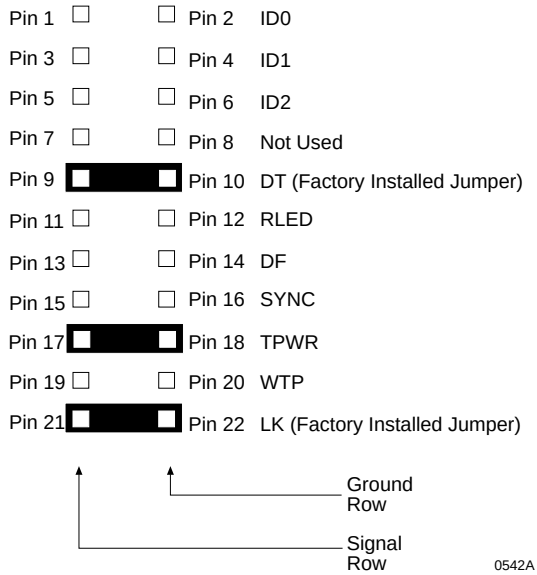


Figure 11: Receiving Frame Motherboard J3A, J3B, J3C Option Pins

Table 2: J3A, J3B, J3C Option Pin Signal Descriptions

PIN	Signal	Function
1	ID0	SCSI ID
2	GND	Ground
3	ID1	SCSI ID
4	GND	Ground
5	ID2	SCSI ID
6	GND	Ground
7		Not Used
8		Not Used
9	DT	Disable On Board Terminator
10	GND	Ground
11	RLEDC	Remote LED Cathode
12	RLEDA	Remote LED Anode
13	DFAULT	Force Drive Fault Signal to Display
14	GND	Ground
15	SYNC	Drive Synchronization Signal
16	GND	Ground
17	TPWR	Terminate Power To/From SCSI Bus
18	GND	Ground
19	WTP	Reserved
20	GND	Ground
21	LKA	Disable Isolator Functions
22	LKB	Disable Isolator Functions

4. With the drive carriers locked into place inside the receiving frame, install the Data Express receiving frame into the drive opening in the computer or expansion chassis. Use the appropriate guides to position the Data Express, and fasten it into place with the four 6-32 x 1/4" screws provided. Figure 12 illustrates the location of the mounting holes. Mounting holes are provided on each side and the bottom of the receiving frame to accommodate a variety of mounting configurations. Use the mounting holes which best suit the computer or expansion chassis configuration.

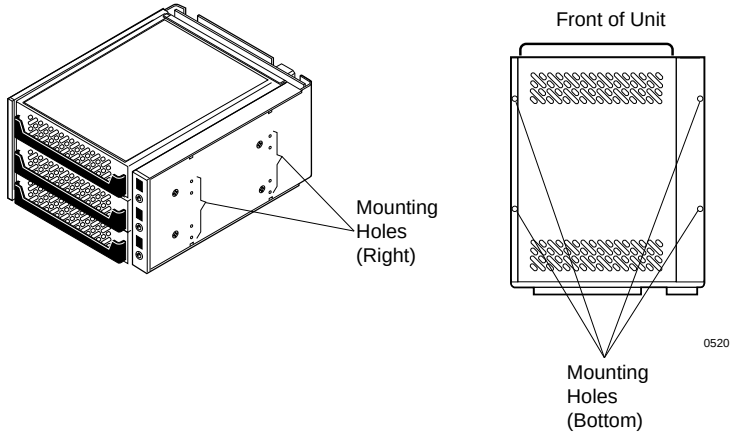


Figure 12: Receiving Frame Mounting Holes

5. Adjust the front of the receiving frame so the carrier slides freely in and out on the receiving frame guides. The position of adjoining peripheral units may require adjustment.

6. To connect a drive to a remote activity LED in the computer system or expansion chassis, connect the appropriate cable(s) to the receiving frame motherboard connectors J3A, J3B, and J3C Pins 11 and 12 as shown in Figure 5.

7. Connect the I/O interface cables from the host adapter to the receiving frame. The pin 1 indicator on the cable must be properly aligned. Refer to Figure 5 for the correct pin 1 location.

8. When installing the Data Express into a computer system, make sure that only the last SCSI device is terminated. If the Data Express is at the end of a daisy chain, the receiving frame termination for the **last device must be enabled by removing the appropriate jumper**. If the Data Express is in the middle of a daisy chain, termination should be disabled (factory installed jumper) at J3A, J3B, and J3C, pins 9 and 10 as shown in Figure 5.

   In most cases, if installing the Data Express into an external expansion chassis, the factory installed jumpers at J3A, J3B and J3C, pins 9 and 10 (disable termination) should be left in place. Termination will be handled by an external terminator on the expansion chassis.

9. Connect the power cable from the DC power supply in the computer or expansion chassis to the power connector on the Data Express receiving frame. Refer to Figure 5 for the Data Express receiving frame power connector location.

10. Replace any expansion boards that may have been removed earlier. Replace the system cover according to the manufacturer's instructions.

11. Reconnect any system or peripheral cables removed earlier.

12. If the Data Express has been installed into an external expansion chassis, connect the SCSI and power cables to the chassis. If the expansion chassis is at the end of a daisy chain, make certain that it is properly terminated. Refer to the computer system and expansion chassis manuals for information on how to do this. Turn on the expansion chassis power *before* turning on the computer system power.

13. Turn on power to the computer. If the installation has been successful, and all cables have been properly attached, the system should boot normally. Although the computer may not recognize the Data Express yet, the appropriate front panel LED indicators on the Data Express should illuminate. If the system does not boot properly, there could be a SCSI ID conflict. Refer to the following section *Selecting the Unit Number.*

    NOTE: The lock on the Data Express receiving frame functions as a lock and a DC power switch for the carrier unit. The lock must be engaged (turned counter-clockwise) in order to supply power to the carrier and installed drive unit.

14. The new drives may need to be formatted or initialized prior to use with the operating system and applications software. Additionally, an appropriate driver may need to installed for the host controller to recognize the newly installed device. Refer to the drive and/or computer manufacturer's documentation for formatting information. Refer to the SCSI host controller instructions for driver information.

Selecting the Unit Number

Each SCSI device on the computer system requires a separate SCSI ID number.

8-bit SCSI interface protocol permits 8 (0-7) unique SCSI ID numbers. Usually, ID7 is reserved for the host controller. If the computer system has any internal or external SCSI devices, some ID numbers may already be reserved. For instance, if the computer system is already equipped with an internal SCSI hard drive, the drive may be designated as SCSI device "0". Refer to the computer system documentation for additional information.

1. Verify that power is turned on to the Data Express receiving frame by turning on the computer or external expansion chassis. A number should appear in the unit display window if the carrier is locked into place.

2. Unlock the Data Express carrier from the receiving frame. The unit number will begin flashing, indicating that the drive is spinning down. DO NOT REMOVE THE CARRIER FROM THE RECEIVING FRAME WHILE THE UNIT NUMBER IS FLASHING. The length of time that the unit number flashes is controlled by a small timing switch located on the side of the receiving frame. Refer to Appendix B for information on adjusting the timer (Figure B-3).

   WARNING: Unlocking the carrier unit switches DC power off to the drive. Since drives require a short amount of time to spin down, allow at least 15 seconds before pulling the carrier unit out of the receiving frame to avoid possible damage to the drive.

3. A "u" will be displayed once the drive has completed spin down and is ready to be removed from the receiving frame. The indicator will return to the SCSI ID number when the carrier is removed from the receiving frame.

4. Use the alignment tool supplied with the Data Express to select the unit number of the disk drive. Refer to Figure 13 for the location of the unit ID select switch inside the receiving frame.

5. After selecting an appropriate unit ID number, replace the Data Express carrier in the receiving frame, and **LOCK IT IN PLACE**.

6. If the Data Express has been installed into an external expansion chassis, verify that power is on to the chassis and that the last device in a SCSI daisy chain is properly terminated.

7. Reboot the computer system.

WARNING: Selecting an invalid ID number, or selecting the same unit ID number on different devices may cause unpredictable results and the computer system may not recognize the installed device(s). If the computer system can not recognize the boot disk, the computer system may fail to start-up properly.

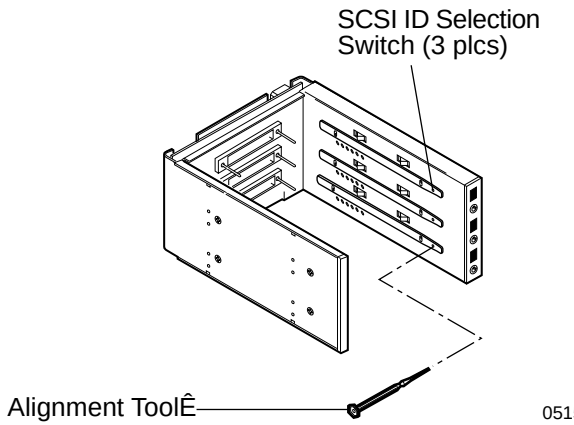


Figure 13: Unit ID Select Switch Location

SCSI Interface Connectors

The SCSI interface connector pin assignments are supplied for your convenience. All odd numbered pins, except pins 25 and 29 must be connected to ground. Pin 25 should be left open. Pin 29 can be used for synchronized spindle operation. Pin 26 is reserved for terminator resistor power source.

Table 3: 50-Pin 8-Bit SCSI Interface Connectors J3, J4, and J5 Pin Assignments

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GROUND	2	-DB (0)	25	OPEN	26	TRMPWR
3	GROUND	4	-DB (1)	27	GROUND	28	-GROUND
5	GROUND	6	-DB (2)	29	SYNC	30	-GROUND
7	GROUND	8	-DB (3)	31	GROUND	32	-ATN
9	GROUND	10	-DB (4)	33	GROUND	34	GROUND
11	GROUND	12	-DB (5)	35	GROUND	36	BSY
13	GROUND	14	-DB (6)	37	GROUND	38	ACK
15	GROUND	16	-DB (7)	39	GROUND	40	-RST
17	GROUND	18	-DB (P)	41	GROUND	42	-MSG
19	GROUND	20	GROUND	43	GROUND	44	-SEL
21	GROUND	22	GROUND	45	GROUND	46	-C/D
23	GROUND	24	GROUND	47	GROUND	48	-REQ
				49	GROUND	50	-I/O

NOTE: The hyphen preceding a signal name indicates that the signal is active low.

Appendices

Appendix A - Specifications/Dimensions

SCSI Data Express subsystems conform to the Small Computer Systems Interface (SCSI) Standard set by the American National Standards Institute (ANSI).

Environmental Specifications		
	Operating	**Storage**
Ambient Temperature	-5° C to 50° C	-45° C to 75° C
Relative Humidity [1]	10% to 80%	10% to 90%
Altitude	-1000 to 50,000 ft -304m to 15240m	-1000 to 50,000 ft -304m to 15240m
Shock [2]	10g	60g

[1]Non-condensing with maximum Gradient of 10% per hour.

[2]11 msec Pulse Width 1/2 Sine Wave.

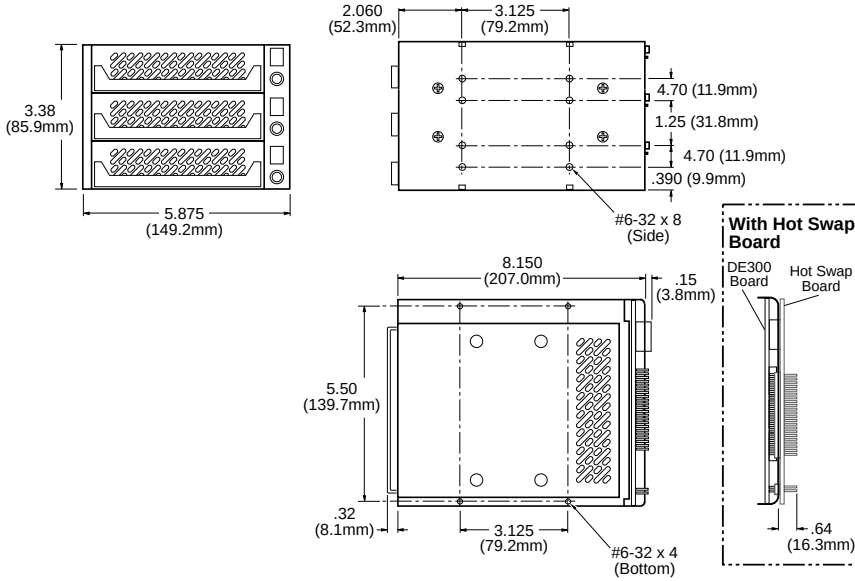
Physical Specifications	**Carrier**	**Receiving Frame**
Height	1.07" (27.2mm)	3.38" (85.9mm)
Width	4.665" (118.5mm)	5.875" (149.2mm)
Depth	7.38" (187.4mm)	8.15" (207mm)
Weight	1.2lb. (.54kg)[1]	2lb (.90kg)[2]

[1]Plus weight of installed drive.
[2]With carrier removed.

Chassis Reliability/Maintainability	
MTBF	500,000 Hours
MTTR	5 Minutes
Preventive Maintenance	None

Electrical Specifications		
Input	+5V	200mA
	+12V	1.2mA

Receiving Frame with Carriers Installed



Carrier Only

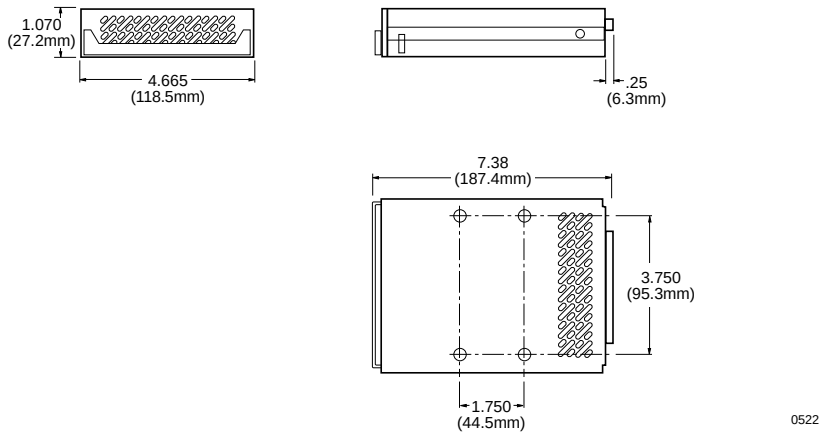


Figure A-1: Data Express Physical Dimensions

Appendix B - Hot Swap Option

The DE300i-S/H SCSI Hot Swap Board allows the installation, removal or exchange of Data Express carriers while your computer system is operating by monitoring and protecting the computer system and other peripheral devices on the SCSI Bus. The Hot Swap option eliminates the need to shut down your system when adding or removing a SCSI device by performing two functions:

1. Delays power up/down of the drive until the time period between SCSI bus cycles. This prevents the interruption of any SCSI bus activity being done by other devices on the bus.
2. Prevents drive power sequencing from generating noise on the SCSI bus, thus preventing data transfer corruption on other devices.

NOTE: Although the Hot Swap Board permits the hot swapping of devices on the SCSI Bus, your system software may not recognize the newly installed or removed device. Most systems scan the SCSI Bus at start-up. If your system software does not support hot swapping, there are two alternatives:

1. Purchase or locate third party software that scans the SCSI Bus. It is readily available for most systems.
2. Reboot the system. This will force the system to rescan the SCSI Bus.

Attaching the Hot Swap Board

If the Hot Swap Board is not already attached to the DE300 receiving frame, follow the steps below for installation instructions. Otherwise, proceed to the Using the Hot Swap Board section for usage instructions.

IMPORTANT NOTE: The device carriers should be locked into the receiving frame prior to the following procedure to maintain proper connector alignment between the receiving frame and the device carriers.

1. Remove the two Phillips head machine screws from the receiving frame motherboard and set the screws aside (Figure B-1).
2. Remove jumpers on the receiving frame motherboard J3A, J3B, and J3C pins 21 and 22 (Figure 5). Option jumpers at pins 9-10 and 17-18 must be installed (default setting) to disable on-board termination at the receiving frame motherboard (Figure 5). The Hot Swap Board (Figure B-2), will control on-board termination. Removing jumpers DTA, DTB, or DTC, will enable termination at the corresponding drive.
3. Attach the two provided standoffs into the receiving frame motherboard holes in place of the two removed screws. Carefully align the connectors of the Hot Swap Board with the connectors on the receiving frame motherboard and gently push the Hot Swap Board into position. Make certain that all connectors are properly mated.
4. Attach the Hot Swap Board to the receiving frame motherboard by using the two screws removed earlier and insert them through the Hot Swap Board into the standoffs.

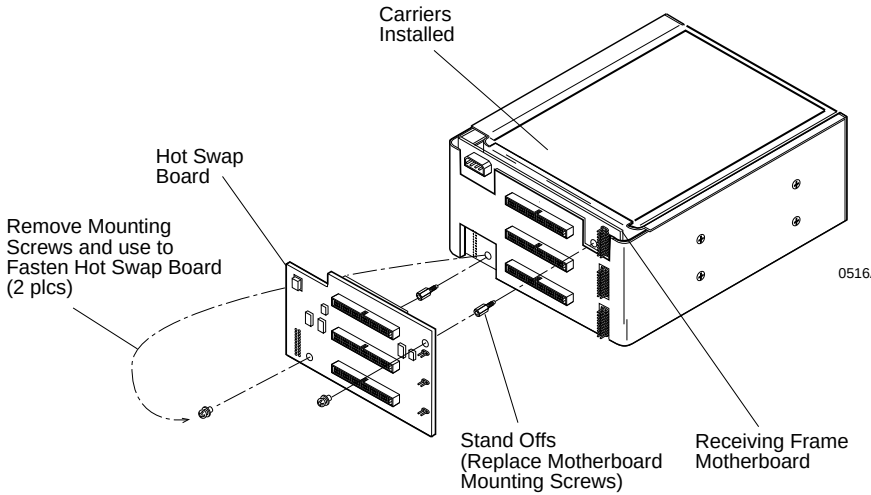


Figure B-1: Installing the Hot Swap Board

Jumper Options

Most jumper options are configurable via the receiving frame motherboard (Figures 5 and 11). The Hot Swap Board provides three configurable jumpers, DTA, DTB, and DTC (Figure B-2). When installed (factory default), these jumpers disable on board termination at drives A, B, and C, respectively. If a DE300 drive will be physically located at the end of a SCSI daisy chain, remove the appropriate jumper to enable termination.

Using the Hot Swap Board

Carrier Removal

Follow the procedures below to remove the Data Express carrier from the receiving frame equipped with the Hot Swap option.

1. Verify that the drive is not active. If the system is on a network, make certain other users are not accessing the target drive, then disable it from the network. Dismount the drive.
2. Turn the DE300 key/lock mechanism (located on the front of the receiving frame), clockwise to the Off position. This unlocks the drive from the receiving frame and activates the Hot Swap Board. The unit number on the display will begin flashing.

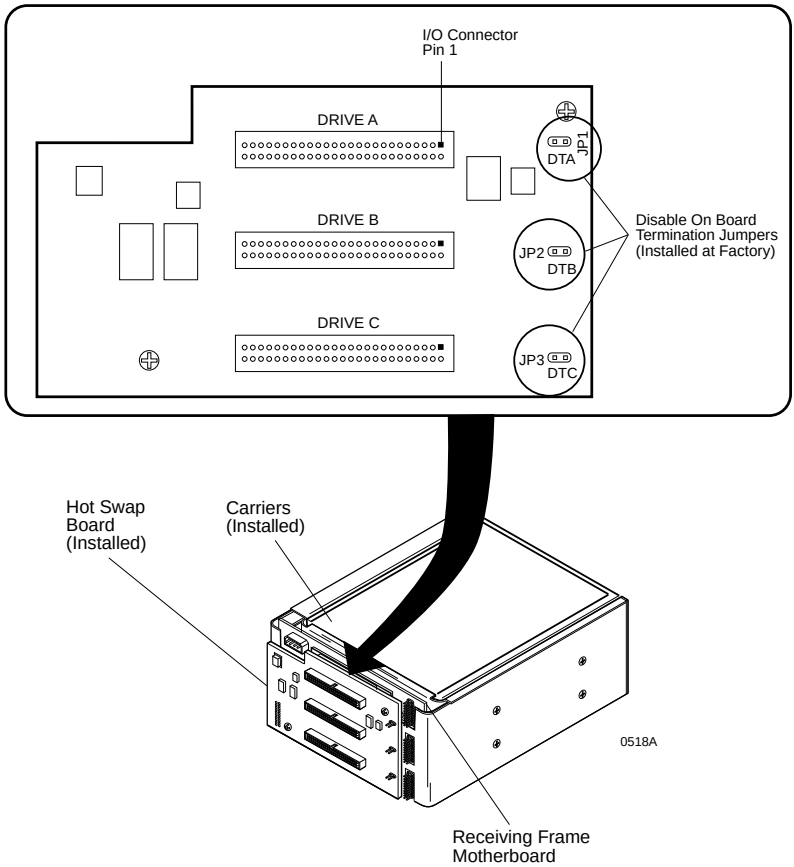


Figure B-2: Hot Swap Board Termination Jumpers

WARNING: Be careful not to remove or disturb the carrier unit at this point. Although the carrier is physically unlocked, the drive requires a minimum of 15 seconds to spin down and is subject to vibration and possible damage during this period.

3. As the unit number flashes, the Hot Swap Board monitors the activity of the SCSI bus. When activity is no longer present, the Hot Swap Board will remove power from the drive and then remove the device from the SCSI Bus. The unit number will continue to flash during this period.

4. After a short length of time the unit display will turn from a flashing unit number to a steady “u”, indicating that the device is powered down, unlocked and ready to be removed from the receiving frame.

NOTE: The timer for device spin down is controlled by a small selector, located in a cutout on the side of the Data Express receiving frame as shown in Figure B-3. When the key is turned to the off position, and when the timer receives a "No SCSI Activity" signal from the Hot Swap Board, it waits the specified delay time before displaying a “u” on the front panel of the receiving frame. The amount of time required for a drive to spin down is approximately 15 seconds or more. This number can vary depending on the type of SCSI device and manufacturer (some drives may require 45 seconds or more). The factory configuration is set for 20 seconds. A different delay time may be selected with the provided adjustment tool. Refer to the SCSI device manufacturer’s manual for more information on required device spin down time.

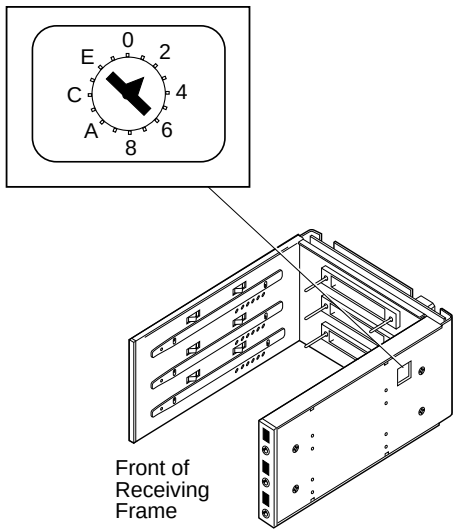
Carrier Installation

Follow the procedures below to install the Data Express Carrier into the receiving frame equipped with the Hot Swap option.

1. Install the Carrier into the Receiving Frame. A "u" will be present on the front panel.

2. Turn the key lock mechanism, located on the front of the receiving frame, counter clockwise to the On position. This locks the drive into the receiving frame and activates the Hot Swap Board. The drive will begin to spin up and the unit number on the display will begin flashing.

3. After a short length of time the unit display will stop flashing, indicating that the device is ready to be used.



Spin Down/Up Time

0 = 10 SECONDS	8 = 50 SECONDS
1 = 15 SECONDS	9 = 55 SECONDS
2 = 20 SECONDS	A = 60 SECONDS
3 = 25 SECONDS	B = 65 SECONDS
4 = 30 SECONDS	C = 70 SECONDS
5 = 35 SECONDS	D = 75 SECONDS
6 = 40 SECONDS	E = 80 SECONDS
7 = 45 SECONDS	F = 85 SECONDS

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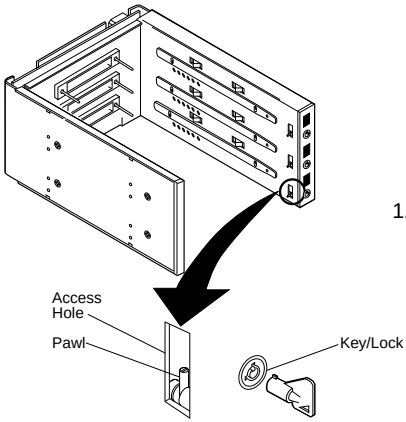
Figure B-3: Device Spin Down/Up Timer

Appendix C - Attaching the On/Off Key

The following information will provide the necessary steps to attach the ON/OFF key to the key/lock mechanism so that it is non-removable. This configuration is preferred for some applications and is reversible.

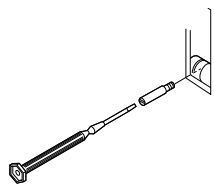


1. Make certain power is off to the receiving frame.

   Locate the rectangular shaped key/lock mechanism access hole on the inside of the receiving frame. Note that the pawl is in an upright position.

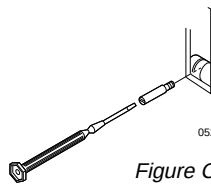
   Insert the key into the key/lock.

2. Rotate the key 90 degrees counterclockwise so that the pawl is visible in the access hole as shown in the figure at left.



3. Using the provided adjustment tool, unscrew and remove the pawl from the access hole.

4. Rotate the key 180 degrees clockwise.



5. Reinstall the pawl into the access hole with the adjustment tool..

   Your key is now attached to the key/lock mechanism.

Figure C-1: Attaching the On/Off Key

Appendix D - Optional Accessories

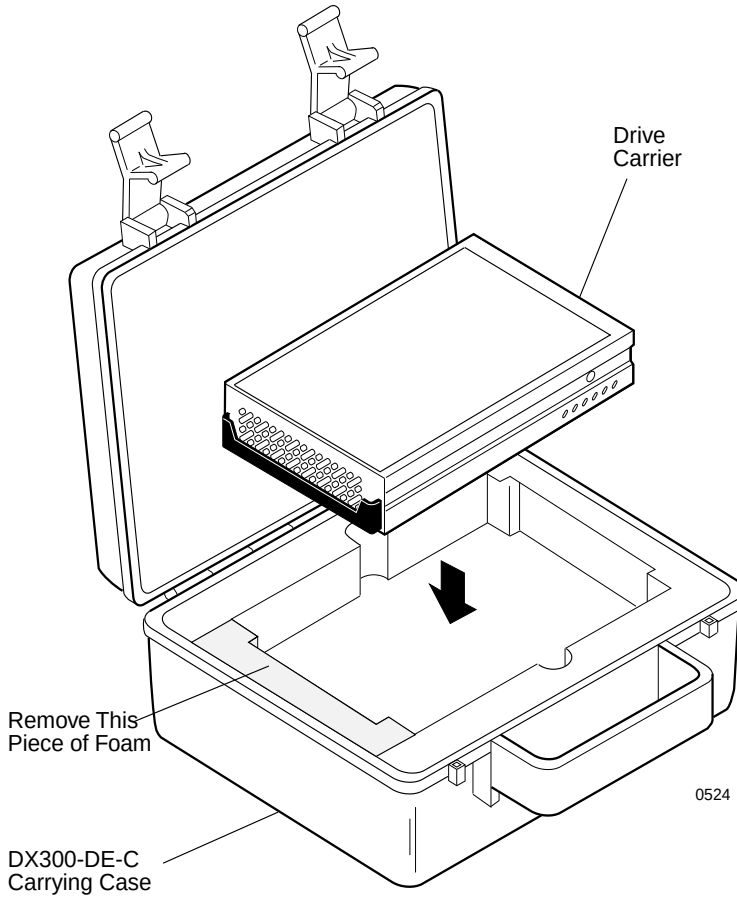


Figure D-1: Optional Data Express Carrying Case

The optional molded plastic carrying case is designed to transport the Data Express carrier from one location to another in a safe, impact and moisture resistant environment. Its compact dimensions, 7” long x 9” wide x 3.5” high, make it easy to carry and to store. The foam lining is contoured to fit a single Data Express carrier with a 1-inch form factor. Contact Kingston for further details and ordering information.

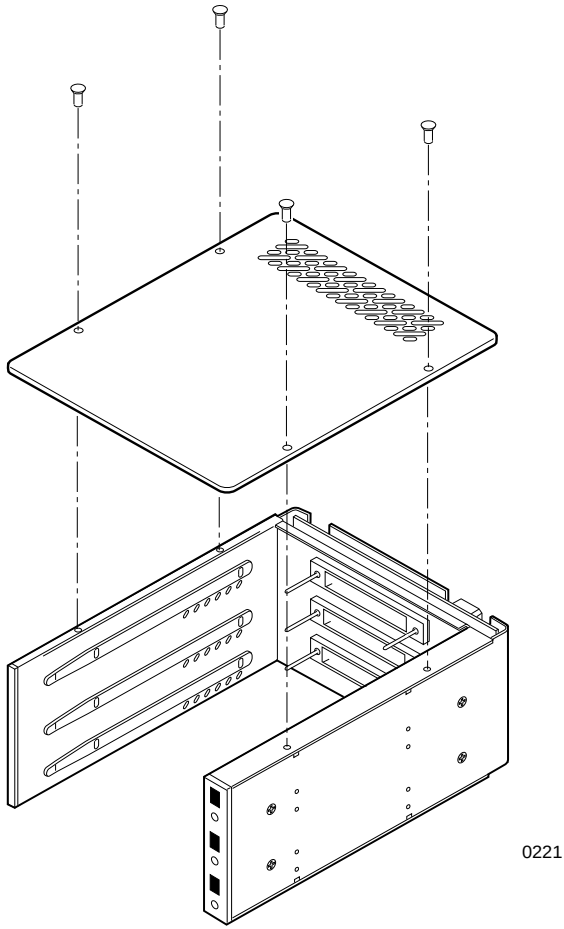


Figure D-2: Optional Data Express DE300 Receiving Frame Brace

If you bottom mount the receiving frame to your system or expansion chassis, you may wish to purchase the optional receiving frame brace. The receiving frame brace provides additional strength and rigidity to this unit. The receiving frame brace is usually not required for normal side mount installations.

READER'S COMMENTS

Please take a few moments when your computer system is up and running to send us your ideas and suggestions for improving our products and documentation. Did the installation go smoothly for you? Are there any changes you would like us to make, either with the hardware itself, or with the installation instructions? Everyone at Kingston Technology is working toward the goal of providing you with the highest quality, most cost effective, products available on the market, and we need your comments to guide our efforts. We look forward to hearing from you soon!

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